UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,358	12/03/2003	Tianyi Liao	LP 4820 US NA	6394

43693 7590 04/21/2010

INVISTA NORTH AMERICA S.A.R.L.
THREE LITTLE FALLS CENTRE/1052
2801 CENTERVILLE ROAD
WILMINGTON, DE 19808

EXAMINER
PIZIALI, ANDREW T

ART UNIT	PAPER NUMBER
1786	

NOTIFICATION DATE	DELIVERY MODE
04/21/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Kathy.L.Crew@invista.com
iprc@invista.com

Office Action Summary	Application No.	Applicant(s)	
	10/728,358	LIAO, TIANYI	
	Examiner	Art Unit	
	Andrew T. Piziali	1786	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 February 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

BPAI

1. On 12/11/2009 (mailed 12/15/2009) the Board of Patent Appeals and Interferences AFFIRMED all of the examiner's rejections. The BPAI stated:

> **"We have thoroughly reviewed each of Appellant's arguments for patentability. However, we are in complete agreement with the Examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will sustain the Examiner's rejections for essentially those reasons expressed in the Answer, and we add the following primarily for emphasis."**

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/15/2010 has been entered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,940,917 to Strachan in view of USPN 5,896,634 to Brodowski et al. (hereinafter referred to as Brodowski).

Regarding claims 9-20, Strachan discloses a composite yarn comprising at least one elastomeric fiber forming a strand with a total draft in a range from 1.2X to 6.2X of an original spun length of the strand; at 1east one hard yarn selected from the group consisting of: synthetic fibers, natural fibers and a blend of synthetic and natural fibers, wherein said hard yarn is aligned adjacent and substantially parallel to said strand to make an aligned yarn (see entire document including column 2, lines 3-68 and column 5, lines 32-39).

Strachan discloses that a size material should not be applied prior to the entangling process, but Strachan discloses that certain finishes may be applied which do not prevent the hard yarns from opening during the entanglement process (column 6, lines 52-59). Strachan also discloses that when a lower tension is applied to the composite yarn the feeding of the yarn into the knitting or weaving may be impaired and the fabric quality may be degraded (paragraph bridging columns 7 and 8). Considering that Brodowski discloses that it is known in the art to apply a size material to a composite yarn to result in easy weavability (see column 1, lines 45-68), it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a size material to cover the composite yarn of Strachan, after the entangling process, because the size material allows for easy weavability of the composite yarn.

Regarding claim 10, Strachan discloses that the elastomeric strand may be a spandex yarn of a denier of from 20 to 140 before stretching and that the hard yarn may have a total denier of from 45 to 900 (see Examples).

Regarding claim 11, Brodowski discloses that a wax may be added to the sizing agent to further improve weavability (column 1, lines 45-67).

Regarding claim 12, Brodowski does not specifically disclose that the sizing agent is applied as a coating, but the examiner takes Official Notice that sizing agents are conventionally applied as coatings.

Regarding claims 13-20, Strachan discloses that the composite yarns may be used to form woven fabrics or knitted fabrics (column 1, lines 12-25) and that the composite yarns may be knit on one bar and hard yarns may be knit on the other (column 10, lines 20-62). Strachan specifically discloses that the particular fabric character and aesthetics will depend on the geometry (column 10, lines 41-48). Absent a showing of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use composite yarns and/or hard yarns in the warp and/or weft yarns of a woven or elastic fabric, in a ratio of from 1:1 to 1:4, because it is understood by one of ordinary skill in the art that the structure of the woven fabric directly affects the cost of the fabric, the fabric character, and the aesthetics, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claims 17-20, Brodowski discloses that the size material is washed away after final finishing (bare strands) (column 1, lines 45-67). Strachan discloses that the yarns may not be twisted (paragraph bridging columns 3 and 4).

Regarding claims 18 and 20, Strachan discloses that the fabric may be used as a garment (column 11, lines 11-22).

5. Claims 9-10 and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,940,917 to Strachan in view of Japanese Patent No. 4 733 754 to Nakatomi et al. (hereinafter referred to as Nakatomi).

Regarding claims 9-10 and 12-20, Strachan discloses a composite yarn comprising at least one elastomeric fiber forming a strand with a total draft in a range from 1.2X to 6.2X of an original spun length of the strand; at 1east one hard yarn selected from the group consisting of: synthetic fibers, natural fibers and a blend of synthetic and natural fibers, wherein said hard yarn is aligned adjacent and substantially parallel to said strand to make an aligned yarn (see entire document including column 2, lines 3-68 and column 5, lines 32-39).

Strachan discloses that a size material should not be applied prior to the entangling process, but Strachan discloses that certain finishes may be applied which do not prevent the hard yarns from opening during the entanglement process (column 6, lines 52-59). Strachan also discloses that when a lower tension is applied to the composite yarn the feeding of the yarn into the knitting or weaving may be impaired and the fabric quality may be degraded (paragraph bridging columns 7 and 8). Considering that Nakatomi discloses that it is known in the art to apply a size material to a composite yarn to result in easy weavability (see entire document), it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a size material to cover the composite yarn of Strachan, after the entangling process, because the size material allows for easy weavability of the composite yarn.

Regarding claim 10, Strachan discloses that the elastomeric strand may be a spandex yarn of a denier of from 20 to 140 before stretching and that the hard yarn may have a total denier of from 45 to 900 (see Examples).

Regarding claim 12, Nakatomi does not specifically disclose that the sizing agent is applied as a coating, but the examiner takes Official Notice that sizing agents are conventionally applied as coatings.

Regarding claims 13-20, Strachan discloses that the composite yarns may be used to form woven fabrics or knitted fabrics (column 1, lines 12-25) and that the composite yarns may be knit on one bar and hard yarns may be knit on the other (column 10, lines 20-62). Strachan specifically discloses that the particular fabric character and aesthetics will depend on the geometry (column 10, lines 41-48). Absent a showing of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use composite yarns and/or hard yarns in the warp and/or weft yarns of a woven or elastic fabric, in a ratio of from 1:1 to 1:4, because it is understood by one of ordinary skill in the art that the structure of the woven fabric directly affects the cost of the fabric, the fabric character, and the aesthetics, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claims 17-20, Nakatomi discloses that the PVA material is washed away after final finishing (bare strands) (column 1, lines 45-67). Strachan discloses that the yarns may not be twisted (paragraph bridging columns 3 and 4).

Regarding claims 18 and 20, Strachan discloses that the fabric may be used as a garment (column 11, lines 11-22).

6. Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,940,917 to Strachan in view of USPN 3,719,664 to Hayes et al. (hereinafter referred to as Hayes).

Regarding claims 9-16, Strachan discloses a composite yarn comprising at least one elastomeric fiber forming a strand with a total draft in a range from 1.2X to 6.2X of an original spun length of the strand; at 1east one hard yarn selected from the group consisting of: synthetic fibers, natural fibers and a blend of synthetic and natural fibers, wherein said hard yarn is aligned adjacent and substantially parallel to said strand to make an aligned yarn (see entire document including column 2, lines 3-68 and column 5, lines 32-39).

Strachan discloses that a size material should not be applied prior to the entangling process, but Strachan discloses that certain finishes may be applied which do not prevent the hard yarns from opening during the entanglement process (column 6, lines 52-59). Strachan also discloses that when a lower tension is applied to the composite yarn the feeding of the yarn into the knitting or weaving may be impaired and the fabric quality may be degraded (paragraph bridging columns 7 and 8). Considering that Hayes discloses that it is known in the art to apply a size material to a yarn to result in easy weavability (column 1, lines 5-43), it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a size material to cover the composite yarn of Strachan, after the entangling process, because the size material allows for easy weavability of the composite yarn.

Regarding claim 10, Strachan discloses that the elastomeric strand may be a spandex yarn of a denier of from 20 to 140 before stretching and that the hard yarn may have a total denier of from 45 to 900 (see Examples).

Regarding claim 12, Hayes discloses that the sizing agent is applied as a coating (column 1, lines 26-43).

Regarding claims 13-16, Strachan discloses that the composite yarns may be used to form woven fabrics or knitted fabrics (column 1, lines 12-25) and that the composite yarns may be knit on one bar and hard yarns may be knit on the other (column 10, lines 20-62). Strachan specifically discloses that the particular fabric character and aesthetics will depend on the geometry (column 10, lines 41-48). Absent a showing of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use composite yarns and/or hard yarns in the warp and/or weft yarns of a woven or elastic fabric, in a ratio of from 1:1 to 1:4, because it is understood by one of ordinary skill in the art that the structure of the woven fabric directly affects the cost of the fabric, the fabric character, and the aesthetics, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

7. Claims 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,940,917 to Strachan in view of USPN 5,896,634 to Brodowski as applied to claims 9-20 above, and further in view of USPN 3,867,242 to Miller.

Regarding claims 13-20, Strachan discloses that the composite yarns may be used to form woven fabrics or knitted fabrics (column 1, lines 12-25) and that the composite yarns may be knit on one bar and hard yarns may be knit on the other (column 10, lines 20-62). Strachan specifically discloses that the particular fabric character and aesthetics will depend on the geometry (column 10, lines 41-48). Strachan does not specifically mention the use of composite yarns and hard yarns in the warp and/or weft direction, but Miller discloses that it is known in the art to alternate elastomeric and non-elastomeric fibers (1:1 ratio) in the warp and/or weft direction to produce the desired fabric characteristics (see entire document including the paragraph bridging columns 4 and 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use composite yarns and/or hard yarns in the warp and/or weft yarns of a woven or elastic fabric, in a ratio of from 1:1, because it is understood by one of ordinary skill in the art that the structure of the woven fabric directly affects the cost of the fabric, the fabric character, and the aesthetics, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claims 17-20, Brodowski discloses that the size material is washed away after final finishing (bare strands) (column 1, lines 45-67). Strachan discloses that the yarns may not be twisted (paragraph bridging columns 3 and 4).

Regarding claims 18 and 20, Strachan discloses that the fabric may be used as a garment (column 11, lines 11-22).

8. Claims 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,940,917 to Strachan in view of Japanese Patent No. 4 733 754 to Nakatomi as applied to claims 9-10 and 12-20 above, and further in view of USPN 3,867,242 to Miller.

Regarding claims 13-20, Strachan discloses that the composite yarns may be used to form woven fabrics or knitted fabrics (column 1, lines 12-25) and that the composite yarns may be knit on one bar and hard yarns may be knit on the other (column 10, lines 20-62). Strachan specifically discloses that the particular fabric character and aesthetics will depend on the geometry (column 10, lines 41-48). Strachan does not specifically mention the use of composite yarns and hard yarns in the warp and/or weft direction, but Miller discloses that it is known in the art to alternate elastomeric and non-elastomeric fibers (1:1 ratio) in the warp and/or weft direction to produce the desired fabric characteristics (see entire document including the paragraph bridging columns 4 and 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use composite yarns and/or hard yarns in the warp and/or weft yarns of a woven or elastic fabric, in a ratio of from 1:1, because it is understood by one of ordinary skill in the art that the structure of the woven fabric directly affects the cost of the fabric, the fabric character, and the aesthetics, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claims 17-20, Nakatomi discloses that the PVA material is washed away after final finishing (bare strands) (column 1, lines 45-67). Strachan discloses that the yarns may not be twisted (paragraph bridging columns 3 and 4).

Regarding claims 18 and 20, Strachan discloses that the fabric may be used as a garment (column 11, lines 11-22).

9. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,940,917 to Strachan in view of USPN 3,719,664 to Hayes as applied to claims 9-16 above, and further in view of USPN 3,867,242 to Miller.

Regarding claims 13-16, Strachan discloses that the composite yarns may be used to form woven fabrics or knitted fabrics (column 1, lines 12-25) and that the composite yarns may be knit on one bar and hard yarns may be knit on the other (column 10, lines 20-62). Strachan specifically discloses that the particular fabric character and aesthetics will depend on the geometry (column 10, lines 41-48). Strachan does not specifically mention the use of composite yarns and hard yarns in the warp and/or weft direction, but Miller discloses that it is known in the art to alternate elastomeric and non-elastomeric fibers (1:1 ratio) in the warp and/or weft direction to produce the desired fabric characteristics (see entire document including the paragraph bridging columns 4 and 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use composite yarns and/or hard yarns in the warp and/or weft yarns of a woven or elastic fabric, in a ratio of from 1:1, because it is understood by one of ordinary skill in the art that the structure of the woven fabric directly affects the cost of the fabric, the fabric character, and the aesthetics, and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Response to Arguments

10. Applicant's arguments filed 2/15/2010 have been fully considered but they are not persuasive.

The applicant asserts that the sizing material taught by the applied prior art (Brodowski, Nakatomi, and Hayes) does not cover the yarn. The examiner respectfully disagrees. As explained by Hayes, "sizing" is a "coating operation" wherein a film-forming material is deposited on a yarn to strengthen and protect the yarn and impart lubricity (column 1, lines 25-43).

The applicant asserts that the elastic yarn of Strachan is not adjacent to the hard yarn. The examiner respectfully disagrees. In the BPAI decision of 12/11/2009 the BPAI stated, "There is no dispute that Strachan, like Appellant, discloses a composite yarn comprising at least one elastomeric fiber and at least one hard yarn adjacent to the elastomeric fiber."

In addition, in the examiner's answer mailed 11/13/2008 the examiner stated that the meaning of "adjacent" is "close to" or "lying near" and that it is clear that the hard yarn and the elastomeric strand are close to each other and lie near each other (see Figure 3). Therefore, the yarn and strand are clearly adjacent. In response, the BPAI stated that they are in complete agreement with the Examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art (see page 3).

The applicant asserts that the elastic yarn of Strachan is not aligned and substantially parallel to the hard yarn. The examiner respectfully disagrees. In the BPAI decision of 12/11/2009 the BPAI stated, "Since we agree with the Examiner that the appealed claims "do not require that every portion of the hard yarn must be substantially parallel with every portion of the

elastomeric strand" (Ans. 13, first sentence), we find no error in the Examiner's finding that Strachan discloses an aligned yard within the scope of the appeal claims, i.e., "a composite yarn that comprises portions wherein a hard yarn and an elastomeric strand are substantially parallel" (Ans. 13, first para.)."

The applicant asserts that Strachan completely teaches away from the use of a size material in column 6, lines 52-59. The examiner respectfully disagrees. As stated in the examiner's answer mailed 11/13/2008, Strachan simply discloses that an especially cohesive size material should not be applied, prior to the entangling process, to allow the bundle to open during the entangling process (column 6, lines 52-59). Therefore, Strachan discloses that certain finishes may be applied prior to the entangling process that do not prevent the hard yarns from opening during the entanglement process and that any size material may be applied after the entangling process.

In addition, in the BPAI decision of 12/11/2009 the BPAI stated, "As for Appellant's argument that Strachan teaches away from the claimed invention by pointing out that the step of using fibers with a sizing material is unnecessary, Appellant has not refuted the Examiner's finding that "Strachan simply discloses that an especially cohesive size material should not be applied, prior to the entangling process, to allow the bundle to open during the entangling process (col. 6, 11. 52-59)." (Ans. 13, sec. para.). Appellant has pointed to no error in the Examiner's finding that "Strachan discloses that certain finishes may be applied prior to the entangling process that do not prevent the hard yarns from opening during the entanglement process and that any size material may be applied after the entangling process" (id.)."

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew T Piziali/
Primary Examiner, Art Unit 1786